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Faith, Climate, and Energy Frugality: Unravelling the Nexus in European Perspectives

Wiara, klimat i oszczędność energii – odkrywanie powiązań z perspektywy europejskiej

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Abstract: This study explores the relationship between religious beliefs, perceptions of climate change, and preferences for energy frugality in Europe using data from the November 2023 European Social Survey across 22 countries. The research reveals a predominant inclination toward median values in addressing climate change, with subtle variations based on levels of religiosity. Lower religiosity tends to be associated with a nuanced attribution of climate change to human activity. There is a complex interplay between religiosity and the perception of personal responsibility in mitigating climate change, indicating some polarisation but an overall increasing sense of accountability. Religious affiliations show distinct attitudes, with Protestants more inclined to attribute climate change to human causes. Roman Catholics are closer to some Protestants, while other Christian denominations exhibit flexibility and common ground with Islam and Judaism. However, it is concluded that demographics and political alignment play a more pivotal role compared to religiosity levels or religious denominations.

Keywords: religion and ecology, environmental consciousness, energy policy, perception analysis

Streszczenie: Niniejszy artykuł bada związek między przekonaniami religijnymi, a postrzeganiem zmian klimatycznych oraz preferencjami dotyczącymi sposobów oszczędzania energii w Europie. Artkuł wykorzystuje dane uzyskane z Europejskiego Sondażu Społecznego przeprowadzonego w 22 krajach w listopadzie 2023 r. Badanie ujawnia dominującą skłonność do mediany wartości w zakresie przeciwdziałania zmianom klimatycznym, z niewielkimi różnicami w zależności od poziomu religijności respondentów. Niższy poziom religijności wiąże się zwykle ze zróżnicowaną tendencją do przypisywania zmian klimatycznych skutkom działalności człowieka. Istnieje złożona zależność między poziomem religijności, a indywidualnym poczuciem odpowiedzialności za przeciwdziałanie zmianom klimatycznym, co wskazuje na pewną polaryzację, ale ogólnie ilustruje wzrost poczucia odpowiedzialności w tym zakresie. Przynależność religijna wpływa na różnicowanie postaw, przy czym protestanci wydają się być bardziej skłonni do przypisywania zmian klimatycznych ingerencji człowieka. Postawy katolików i protestantów wykazują pewną zbieżność, natomiast w przypadku innych wyznań chrześcijańskich można dostrzec pewną elastyczność oraz punkty wspólne z islamem i judaizmem. Stwierdzono jednak, że w porównaniu z poziomem religijności lub wyznaniem religijnym, kluczową rolę odgrywają tu czynniki demograficzne oraz poglądy polityczne.

Słowa kluczowe: religia i ekologia, świadomość środowiskowa, polityka energetyczna, analiza percepcji

Introduction

The relationship among religious beliefs, personal values, and societal preferences has gained significance in the evolving landscape of environmental consciousness and policymaking (Öhlmann and Swart 2022; Sharma, Ang, and Fredriksson 2021; Balcomb 2019; Monsalve Girón 2019; Pihkala 2018; Bratton 2018; Kollar 2019; Michaels et al. 2021; Rifat, Toriq, and Ahmed 2020; Puglisi and Buitendag 2022; Rappaport and Corbally 2023). Europe serves as a distinctive context where environmental concerns intersect with deeply ingrained Christian values and other faiths, providing an interesting setting for examining the connections between religiosity, environmental attitudes, and energy policy preferences.

This article aims to address the question of how religiosity and affiliations influence individuals' climate change views and shape their preferences for energy frugality according to the socio-demographic variables from the European Social Survey (ESS). While acknowledging the potential value of examining the ESS through the lens of the respondents' country of origin to consider cultural influences and potential variations in national environmental awareness, the primary emphasis of this study remains centred on the individual human level. The goal is to scrutinise each participant's responses, delving into the interplay of individual factors, including religiosity level, religious denomination, perspectives on climate change, and opinions and preferences concerning climate and energy frugality.

The foundational focus of this exploration is Christianity in all its major denominations, grounded in the religion's historical significance on the continent. Over centuries, Christianity has played a central role in shaping cultural norms, ethical frameworks, and societal attitudes, with Christian communities often serving as influential actors in societal dynamics, particularly in how environmental issues are approached and understood (Brown 1990; Stark 2014; MacCulloch 2009).

Presently, there is a notable surge in community dynamics, evidenced by the growing significance of agent-based initiatives. Prominent among these organisations are the Global Catholic Climate Movement, now known as the Laudato si' Movement (LSM 2024), and the Islamic Foundation for Ecology and Environmental Sciences (IFEES/EcoIslam 2024). These entities, among others, have actively contributed to shaping the dialogue surrounding environmental and ecological issues. However, as revealed in the subsequent literature review, before delving into community dynamics, it is imperative to enhance our comprehension of the factors that elucidate the impact of faith at the individual level.

The subsequent sections of the article unfold as follows. Section 1 reviews the ongoing debate about the potential effects of Christianity on the environment and environmental values. Section 2 outlines the materials and methodology proposed for this contribution. Section 3 presents the results, which are subsequently discussed in Section 4. Finally, the last Section compiles the conclusions.

1. Christianity and the Environment

The nexus between Christianity and environmental concerns has captivated the attention of scholars, theologians, and environmentalists, fostering a complex discourse that has evolved over decades. Diverse beliefs, interpretations, and practices have woven a rich tapestry defining this multifaceted relationship. While some assert that Christian traditions emphasise human dominion over the Earth, an opposing perspective contends that Christianity harbours a profound ecological ethic rooted in stewardship and environmental care. This literature review examines the dynamic evolution of the debate, tracing its origins, and delving into both qualitative and quantitative dimensions.

The ecological predicament marked a pivotal juncture in human history (Sadowski 2020), and originally, Lynn White's seminal work, "Historical Roots of Our Ecologic

Crisis" (1967), highlighted the impact of Christianity on humanity's perception of nature. White argued that the victory of Christianity over ancient paganism triggered a profound shift, leading to a separation between Christian figures and local nature. This spiritual disconnection fostered a view of nature as a resource for exploitation, rather than an integral part of the interconnected web of life (White 1967).

Critics and proponents have engaged in a lively qualitative discussion on Christianity's role in the environmental crisis. While some argue that Christianity bears significant guilt for environmental issues in line with White (Sutton and Anderson 2004; Toynbee 1934; Hughes 1975; McHarge 2006; Nicholson 1989; Worster 1994), others posit a more nuanced perspective. Despite Christianity's historical elimination of certain nature-friendly principles, it introduced its own set of principles rooted in responsible stewardship, drawing from the Holy Scriptures and Church tradition (Sadowski 2020). Early Christian thinkers portrayed nature as a means of divine communication, shaping pro-environmental attitudes (Tanzella-Nitti 2005; Agustinus 1845; Pedersen 1992; Palmer et al. 2010).

Pope Francis' encyclical, *Laudato Si'*, has emerged as a focal point in contemporary environmental discourse. This comprehensive position on climate change advocates for a transformative shift, incorporating religious perspectives to deepen the understanding of the climate crisis (Ferrara 2019). The literature reflects diverse analyses, exploring the impact of the encyclical on health, well-being, and the Catholic Church's initiatives for environmental well-being (Mayer, George, and Nass 2020; Gozum, Garcia, and Nucum 2022).

The literature has also seen the emergence of a parallel quantitative exploration of the subject. Quantitative studies delve into the correlation between religious affiliation and industrial pollution, revealing links between conservative Protestantism and higher pollution levels (Smiley 2019). Evangelical Protestants' individualistic stance influences their views on environmental issues, with theological beliefs exerting a more substantial impact than religious affiliation (Smith, Hempel, and MacIlroy 2018). The impact of religion on environmental views varies across demographics, emphasising the need for nuanced analyses based on cultural and political contexts (Michaels et al. 2021; Shin and Preston 2021; R.K. Brown, Kaiser, and Evans 2023; Cope et al. 2023; Petrescu-Mag et al. 2020; Briguglio, Garcia-Muñoz, and Neuman 2020). Additional investigation is necessary to establish the connections.

2. Materials and Methods

Considering prior research, this study seeks to address two research inquiries:

- Is there a discernible relation between the religiosity levels of individuals, their religious affiliations, and their perspectives on climate change and energy frugality?
- How effectively can social connections be established between religions, climate change attitudes, and energy frugality preferences among individuals? Should religious-based categorisation prove inadequate to what degree can sociodemographic variables provide a more effective elucidation of groupings and their relationships compared to religious factors?

This research employs the most recent data derived from the European Social Survey (ESS Round 10: European Social Survey Round 10 Data 2020; 2023), to investigate the influence of religion on the perspectives towards climate change and the preferences for energy frugality among individuals across Europe. The ESS, a biennial cross-national survey, serves as a comprehensive source of information for individuals aged 15 and above, ensuring both comparability and adherence to research ethics in constructing its database (International Statistical Institute 2010). Key data collection standards include a response rate

target of 70%, a maximum non-contact rate of 3%, a fieldwork period of at least 6 weeks, detailed interviewer briefings, limited interviewer workload, and specific call schedules. The ESS Core Scientific Team (CST) supports countries in adhering to these standards through guidelines, training materials, and individual feedback.

The entire process is monitored by the CST, which requires countries to document and discuss planning and progress at various stages. Before data collection, there is a quality report and the completion of a fieldwork questionnaire. Fieldwork projections are also provided. During data collection, countries submit weekly case-level information on progress. After data collection, countries deposit the main dataset and fieldwork documents at the ESS Data Archive, providing metadata and paradata. The CST analyses quality aspects, ensuring a standardised approach.

Sampling requires the inclusion of representative individuals aged 15 and above, residing in private households, regardless of nationality, citizenship, or language. Random probability methods are consistently applied at each stage, with the approved utilisation of sampling frames. Each participating country strives to attain a minimum effective sample size of 1,500 (or 800 in smaller nations) after accounting for design effects. It is forbidden to employ quota sampling, and the substitution of non-responsive individuals is strictly prohibited at every stage of the process.

The database version utilised in this research corresponds to the November 2023 publication (edition 3.2). It pertains to the 10th round of the Survey with data collected from September 2020 to May 2022 for 37,611 individuals in 22 countries: Belgium (3.6% of valid observations), Bulgaria (7.2%), Croatia (4.2%), Czechia (6.6%), Estonia (4.1%), Finland (4.2%), France (5.3%), Greece (7.4%), Hungary (4.9%), Iceland (2.4%), Ireland (4.7%), Italy (7%), Lithuania (4.4%), Montenegro (3.4%), the Netherlands (3.9%), Norway (3.8%), North Macedonia (3.8%), Portugal (4.9%), Slovenia (3.3%), Slovakia (3.8%), Switzerland (4%), and the United Kingdom (3.1%). Considering that individuals retain the autonomy to opt out of certain inquiries, the overall count of observations in this research encompasses a spectrum ranging from 6,782 to 11,229 individuals. This variability is contingent upon the assortment of variables being scrutinised in the study.

To meticulously examine the relationships under investigation, a curated set of variables has been chosen and is detailed below. This study examines individuals' self-assessed levels of religiosity, denomination, opinions on climate change and energy frugality, and contextual sociodemographic variables such as gender, age, level of education, employment status, and political views. The variables under examination include:

- rlgdnm – Religion or denomination followed at present.
- rlgdgr – How religious you are.
- ccnthum – Climate change caused by natural processes, human activity, or both.
- ccrdprs – To what extent you feel personally responsible for reducing climate change.
- wrclmch – How worried you are about climate change.
- testic34 – Imagine large numbers of people limit energy use, how likely it is to reduce climate change.
- testic35 – How likely it is that large numbers of people limit energy use.
- testic36 – How likely it is that governments in enough countries take action to reduce climate change.
- impenv – How important it is to care for nature and environment.
- gndr – Gender.
- agea – Age of respondent, calculated.
- eisced – Highest level of education, ES – ISCED.
- pdwrk – Doing last 7 days: paid work.
- lrscale – Placement on left-right scale.

This study applies a dual-pronged analytical approach. Firstly, it delves into

the scrutiny of statistical distributions of attitudes and preferences across various religious levels and denominations. Secondly, it incorporates a clustering analysis to further illuminate patterns and associations within the collected data.

Clustering analysis categorises akin data points into clusters or segments. These clusters aim to achieve optimal internal homogeneity by leveraging specific characteristics or features as the basis for grouping. The goal is to identify inherent patterns and relationships within the data, allowing for a better understanding of the connections between individuals based on their traits.

Hierarchical clustering proves advantageous in exploring the influence of religions on attitudes and preferences. It avoids the need for a predefined number of clusters, enabling more exploratory analysis and avoiding aprioristic suppositions about the linkages between denominations. Its flexibility accommodates various cluster shapes and sizes, making it adaptable to the complexity of social and cultural data. The identification of suitable clusters is established through the application of an objective criterion, which is in harmony with the underlying logic of the algorithm. The optimal number of clusters is defined as the one that achieves the utmost reduction in distances between distinct groups (Thorndike 1953). Subsequently, the traits of the groups are compared.

3. Results

This section unveils the outcomes derived from the examination of distributions and clustering patterns, specifically centred around the levels of religiosity and the diverse religious denominations under scrutiny.

3.1. Distributions

Examining the distribution of respondents while cross-referencing their beliefs on the causes of climate change and the extent of their concerns alongside their self-disclosed religiosity levels (depicted in Figures 1 and 3), a discernible inclination emerges towards the selection of middle values, echoing a trend often observed in matters about human-related issues. People tend to exhibit a bias toward the middle option, particularly in contentious or ambiguous situations (Tourangeau, Rips, and Rasinski 2000; Krosnick 1991).

However, a nuanced exploration of the distribution patterns across varying degrees of religiosity unveils nuances. Among respondents with lower levels of religiosity, represented by distinct shades of blue in Figure 1, there is a pronounced tendency to attribute climate change predominantly to human activity. In contrast, individuals with higher levels of religiosity exhibit a distribution that leans more towards the perspective that climate change results from a balance of natural processes and human activities. Irrespective of religiosity levels, there is a general proclivity towards opting for the middle ground.

In examining the perceived personal responsibility in mitigating climate change in Figure 2, while the moderate option exhibits a resurgence in interest, a secondary peak is discernible at higher responsibility levels, specifically around level 8. Two lower peaks emerge—one in the lower spectrum and another in the highest echelons of responsibility. This distribution suggests a complex interplay between religiosity and personal responsibility. Although indications of polarisation may surface, an overarching upward trajectory in the data alludes to a prevailing sentiment of heightened accountability among individuals in addressing the challenges posed by climate change. No unequivocal relations emerge between religiosity and the inclination toward personal responsibility or level of worry, underscoring the intricate and multifaceted nature of the relationship between these variables.

Analysing response distributions based on participants' religious affiliations in Figures 4, 5, and 6, the data suggests a preference for the middle option in all denominations except for Protestants, indicating

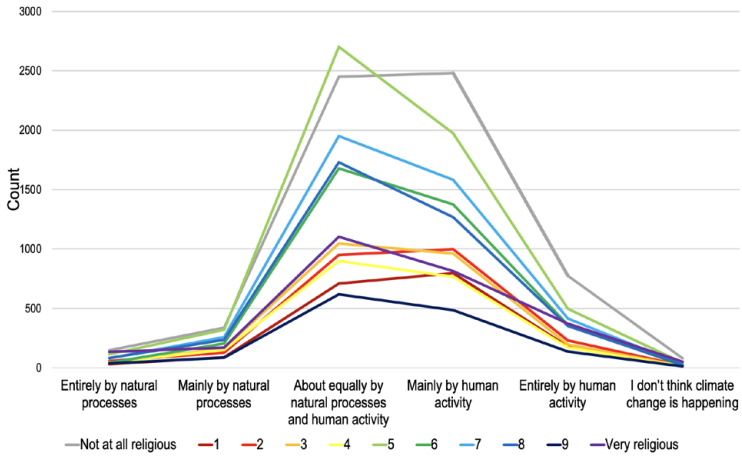

Figure 1. Distribution of respondent perspectives on the causes of climate change, considering their religiosity levels
Source: Own elaboration.

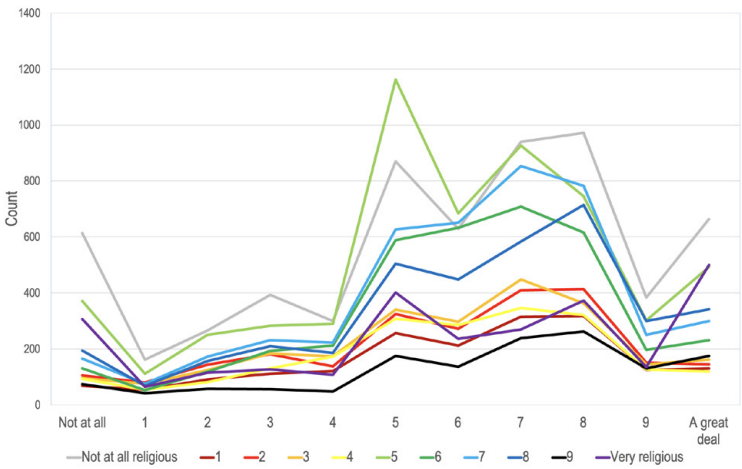

Figure 2. Distribution of respondent perspectives on personal responsibility, considering their religiosity levels
Source: Own elaboration.

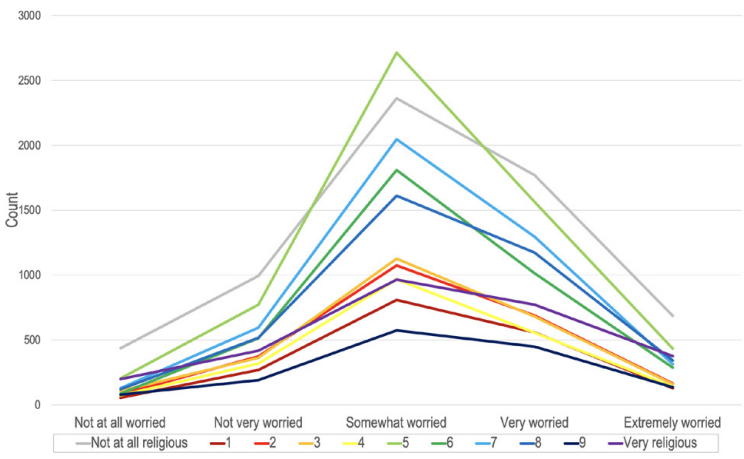

Figure 3. Distribution of respondent perspectives on concern regarding climate change, considering their religiosity levels
Source: Own elaboration.

a belief that climate change results equally from natural and human processes. However, Protestants seem to lean towards a balance between human and natural causes, with a notable concentration in the mostly human category.

The level of personal responsibility among Catholic respondents reveals a pattern characterised by two distinct peaks. There is a relative maximum in the middle option and an absolute maximum at levels 7 and 8. In contrast, Protestants exhibit a consistent upward trajectory, culminating in a singular absolute peak at level 8, indicating a prevailing conviction in their responsibility to address climate change. This trend is also observable among other Christian denominations grouped as a residual category. Eastern Orthodox respondents show a peak at the midpoint option, mirroring the pattern observed among Muslims.

The lower number of responses from representatives of the Jewish denomination complicates the extraction of conclusive trends. Despite this limitation, the analysis underscores the varied perspectives within different religious groups, shedding light on their beliefs regarding the causes and responsibilities related to climate change.

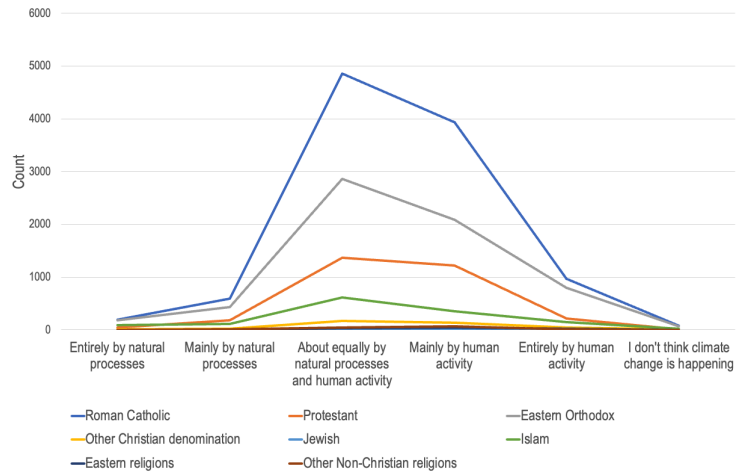

Figure 4. Distribution of respondent perspectives on the causes of climate change, considering their religious denomination
Source: Own elaboration.

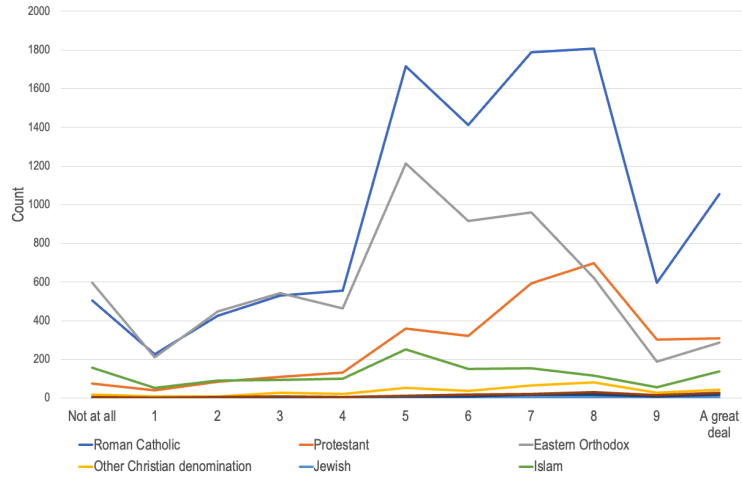

Figure 5. Distribution of respondent perspectives on personal responsibility, considering their religious denomination
Source: Own elaboration.

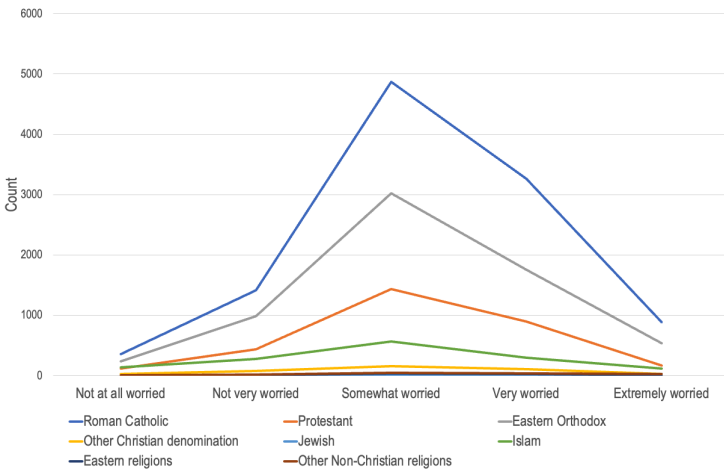

Figure 6. Distribution of respondent perspectives on concern regarding climate change, considering their religious denomination
Source: Own elaboration.

3.2. Groups and Traits

An investigation into the relationship between religiosity and attitudes toward climate change has resulted in the identification of eleven distinct clusters. These clusters have been determined by assessing beliefs regarding the causes of climate change, perceived personal responsibility in mitigating its effects, levels of concern about climate change, trust in energy frugality, attitudes toward government intervention, and identification with the ethos of caring for nature.

These clusters reflect the varied ways in which religious beliefs intersect with environmental consciousness, highlighting the diverse perspectives within the spectrum of religiosity. Rather than presenting a uniform stance, the identified clusters underscore the multifaceted nature of individual perspectives on climate change within religious contexts.

Aligning the clusters based on the level of religiosity in Table S1[1], three groups can be distinguished: high religiosity clusters, medium religiosity or highly variable religiosity clusters, and low religiosity clusters.

In high religiosity clusters, Cluster 1 perceives climate change as both natural and human-induced, with varying personal responsibility and high concern. Cluster 3 leans toward a human-centric view, with high personal responsibility and worry. Cluster 4 maintains a balanced perspective with low personal responsibility and concern. Cluster 8 has variable views, high personal responsibility, and trust in energy frugality but low trust in government action.

Medium religiosity or highly variable religiosity clusters (Cluster 5 and Cluster 11) exhibit diverse perspectives on climate change, with varying attributions and personal responsibility. Trust in energy frugality ranges from low to medium, and there's moderate identification with nature care.

Low religiosity clusters (Cluster 2, Cluster 6, Cluster 7, Cluster 9, and Cluster 10) show diverse views on climate change. Cluster 2 has a minimal inclination for personal responsibility and low concern. Cluster 6 exhibits a spectrum of perspectives with strong personal responsibility and concern. Cluster 7 shares similarities with Cluster 6 but with lower confidence in energy frugality and government actions. Cluster 9 recognises personal responsibility and has moderate concerns. Cluster 10 has low personal responsibility and concern, with moderate trust in energy frugality and government actions.

The analysis suggests that religiosity's impact on environmental attitudes is nuanced. Religiosity levels may influence

1 Tables marked with "S" are accessible in a separate "Supporting Data" file entitled Appendix 1.

views but do not determine a singular perspective, indicating other factors at play as well as a marginal nature in clusters with broad levels of religiosity.

In the ongoing analysis, seven clusters emerge when individuals are categorised based on their religious denominations in Table S2. The categorisation takes into consideration the previous factors, including beliefs regarding the causes of climate change, perceptions of personal responsibility in mitigating it, levels of concern about climate change, trust in energy frugality, trust in government intervention, and identification with a commitment to caring for nature.

This approach aims to capture the relationship between religious affiliations and individuals' attitudes and perceptions. The identified clusters offer a means of exploring variations within religious denominations.

The clusters, differentiated by denominations, demonstrate varying perspectives on climate change causes and levels of personal responsibility and concern regarding climate change. Trust in energy frugality is present across several clusters, but the perceived likelihood of its implementation differs. The clusters also vary in their levels of trust in government actions. Identification with the care for nature is present in all clusters, but the strength of this identification varies.

Despite denominational similarities, certain clusters share commonalities in attitudes. This suggests that specific attitudes may transcend individual religious denominations. Notwithstanding, it is worth noting that Roman Catholics tend to engage with Protestants but seldom appear with other religious affiliations. In contrast, Protestants exhibit a greater versatility in joining diverse religious clusters.

The arrangement of clusters in the landscape unveils a dearth of distinct relationships within their composition. Examining the distributions fails to yield significant differences. Hence, it becomes imperative to explore deeper into more significant personal traits that may wield a decisive influence on shaping cluster alignments. This exploration aligns with prior evidence suggesting that factors beyond religion hold greater relevance in this context (Section 1).

4. Discussion

The analysis presented highlights the intricate relationship between religiosity and environmental attitudes, emphasising the need for a nuanced understanding of how religious beliefs intersect with views on environmental issues. The key takeaway is that while religiosity may influence environmental attitudes, it does not dictate a uniform perspective within religious groups.

One noteworthy finding is the diversity within medium religiosity clusters, suggesting that factors beyond religious beliefs contribute to shaping environmental perspectives. The marginal nature of these clusters within broad levels of religiosity implies that other influences, whether cultural, social, or individual, play a significant role in determining attitudes towards the environment. This challenges the notion of a direct correlation between religiosity and environmental views and emphasises the multifaceted nature of the factors at play. Likewise, the commonalities in attitudes among certain clusters, despite denominational compositions, indicate that specific attitudes may transcend individual religious affiliations.

To examine the hypothesis pointing to other potential factors conditioning the results, demographic variables such as gender, age, education level, job status, as well as political alignment are subjected to testing. Conducting a component analysis is considered inappropriate due to the inherent characteristics of the data and the presence of missing values. These challenges stem from the examination of sensitive topics and the intricate and irregular nature of human behaviour. Consequently, a new cluster analysis is employed to align with the logical progression of the results and discern potential variations. Utilising the same methodology elucidated in the methodological section,

this study determines that 8 clusters represent the optimal outcome (Table S3).

Exploring the recently incorporated demographic variables, all clusters exhibit a mix of individuals from both genders, except for clusters 3, 5, and 6. Notably, cluster 3 predominantly consists of female individuals, while clusters 5 and 6 lean towards male individuals. However, clusters 5 and 6 are marginal, accounting for only 0.1% of respondents, whereas cluster 3 comprises a substantial 12.6% of participants. This suggests that gender may not be a significant factor in shaping perceptions and preferences, apart from cluster 3. Nevertheless, it is imperative to delve into additional factors.

Turning attention to age, young respondents belong to clusters 2 and 8, albeit cluster 8 is marginal (0.1% of respondents). Middle-aged individuals are found in clusters 4 and 6, with cluster 6 being marginal. Older adults are distributed across clusters 1, 3, 5, and 7, with cluster 5 being marginal. Job status, intertwined with age, is omitted from this interpretation to prevent redundancy.

Examining education, non-ISCE education types are relegated to marginal clusters. Cluster 1 prominently exhibits the highest educational qualifications, whereas cluster 2 aligns with individuals at a younger age, correlating with lower educational attainment, reflective of their limited time for training completion. Meanwhile, clusters 3 and 4 showcase comparable educational levels.

Political views exhibit greater consistency, with clusters consistently leaning towards the left or right. Non-marginal clusters inclining towards the right wing are 2, 3, 4, and 7. In the left-leaning spectrum, only cluster 1 is not marginal. This suggests that centre to right-leaning clusters are less uniform, necessitating introduction of further variables to discern differences.

Despite these shifts in variables, climate change causation draws individuals towards the middle option, reinforcing the prevalence of a middle-point bias. Consequently, this issue offers limited information for result interpretation.

Cluster 1 stands out, characterised by senior individuals with higher education levels leaning from the centre towards the political left. Personal responsibility and concern are varied but generally situated in the lower part of the distribution. Pessimism is evident in attitudes towards energy frugality and trust in governments. Pessimism, coupled with an inherent ideological inclination towards collective action and group prioritisation over individual efforts, could be a reason for a diminished sense of personal responsibility in addressing climate change. Additional exploration in this direction is necessary.

In centrist to right-leaning political ideologies, personal responsibility is higher, accompanied by increased concern among seniors and younger individuals. Middle-aged respondents exhibit a decline in their sense of responsibility. The same trend applies to optimism regarding frugality and governments doing the right thing, with older and younger adults expressing more hope than middle-aged individuals. Those aged 17-25, while trusting in frugality and governments, exhibit greater variability in their responses. Notable cases include senior women and middle-aged individuals, expressing a higher level of identification with nature-centric values. In cluster 2, education levels provide less insight due to the conditioning effect of young age. Clusters 3 and 4 exhibit similar education levels.

Marginal clusters 5, 6, and 8 exhibit inconsistent traits leaning towards the middle ground in most variables, lacking significant patterns. In subsequent clustering runs with varying cluster numbers, these marginal groups re-emerge, possibly attributable to the middle-option bias and respondents with higher variability.

This interpretation resonates with a conclusion observed in quantitative evidence (Section 1), highlighting the heightened significance of demographic factors when juxtaposed with religious considerations. Notably, the study conducted by Cope et al. (2023) underscores the prominence

of political affiliation, asserting that political views wield a more contextual influence compared to religiosity. It is crucial to acknowledge, however, that Cope et al.'s investigation was conducted in rural Utah, whereas this study encompasses a broader scope, spanning Europe and encompassing both rural and urban settings. Moreover, diverse political alignments may manifest distinct values in various contexts and scales, particularly comparing Europe and the US.

The study recognises limitations due to missing values in selected variables. However, the sample size is substantial, ranging from 6,782 to 11,229 individuals. Likewise, there are limitations in the representation of denominations inherited from the data source, the ESS, including the underrepresentation of Jewish respondents and oversimplified categorisations of Christian denominations. Future research should address these limitations by using more precise databases or conducting field research to enhance understanding of specific religious categories.

Conclusions

This study explores the relationship between religious beliefs, climate change views, and energy frugality preferences in Europe using data from the November 2023 edition of the European Social Survey across 22 countries. The goal is to investigate the relationship between religiosity levels, religious affiliations, and individuals' perspectives on climate change and energy frugality, as well as the social connections that can be established based on them. Additionally, the study seeks to determine if sociodemographic variables can provide a more effective explanation of groupings and relationships compared to religious factors, as suggested in prior works addressing other case studies.

The research employs a dual analytical approach, examining statistical distributions of attitudes across various religiosity levels and religious denominations, and conducting clustering analysis to unveil patterns in the data. Results suggest a tendency towards the middle option on climate change factors, with nuances based on religiosity levels. Lower religiosity correlates with attributing climate change to human activity, while higher religiosity leans towards a middle ground. The interplay between religiosity and personal responsibility in mitigating climate change indicates polarisation but an overall upward trajectory in accountability. Protestant respondents stand out in attributing climate change to human causes. Despite denominational similarities, specific attitudes may transcend individual religious denominations. Demographic factors and political affiliations exert a more pronounced coherence on environmental perceptions than religiosity. The centre-left political alignment shows homogeneity and pessimism, while the centre-right spectrum displays diversity, with both younger and older adults demonstrating elevated scores in energy frugality and trust in governments.

Examining the central role of Christianity in Europe, rooted in its historical and cultural significance, prompts a nuanced exploration of its qualitative relationship with the environment. While it is true that Christianity displaced animistic and nature-centric religions, it also introduced its own set of environmental moral principles. However, delving into the quantitative aspects reveals a complex and multifaceted landscape.

Contrary to a straightforward association between religiosity and environmental concerns, diverse distributions of respondents and groupings emerge. The relationship between beliefs is far from univocal. Individuals from various faiths often converge on similar conclusions or develop closely aligned sets of environmental beliefs, transcending strict religious boundaries.

Rather than religious affiliations, political alignment emerges as a more influential factor, with subsequent implications for demographics, primarily driven by age. Understanding the dynamics of environmental perspectives necessitates a broader consideration of sociopolitical factors, which would offer a more comprehensive lens

allowing to analyse and comprehend these intricate relationships.

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Appendix 1: Supporting Data for Faith, Climate, and Energy Frugality: Unravelling the Nexus in European Perspectives

Table S1. Profiling of the clusters based on religiosity

	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7	Cluster 8	Cluster 9	Cluster 10	Cluster 11
Religiosity	10 to 7	1	10 to 7	10 to 7	8 to 6	0 to 1	0 to 1	10 to 7	0 to 1	0 to 2	10 to 6
Climate change cause	About equally natural and human to mainly natural	Entirely natural to about equally natural and human	Mainly human	About equally natural and human	Entirely human to about equally natural and human	Entirely natural to mainly human	Entirely natural to mainly human	Entirely human to mainly human	About equally natural and human	Mainly human to about equally natural and human	Mainly human to about equally natural and human
Personal responsibility	0 to 8	0 to 2	10 to 8	0 to 1	8 to 5	10 to 8	10 to 8	10 to 7	10 to 7	0 to 3	10 to 6
Worry	Extremely to very worried	Not very worried	Very worried	Not at all to somewhat worried	Very to somewhat worried	Somewhat to very worried	Somewhat to very worried	Not very to very worried	Somewhat worried	Not at all to somewhat worried	Very to somewhat worried
Energy frugality to reduce climate change	10 to 8	0 to 2	10 to 7	0 to 3	0 to 6	10 to 7	10 to 8	10 to 8	0 to 4	10 to 6	0 to 4
Likelihood energy frugality	10 to 8	6 to 1	0 to 4	0 to 2	10 to 5	10 to 6	0 to 3	8 to 4	0 to 4	0 to 4	0 to 2
Likelihood governments acting	10 to 7	3 to 2	10 to 6	10 to 3	10 to 5	10 to 7	0 to 3	0 to 3	10 to 4	5 to 6	0 to 3
Care for nature	A little like me – like me	Like me – somewhat like me	Very much like me – like me	Like me – somewhat like me	Like me	Like me	Very much like me – like me	Not like me – like me	Like me	Like me	Like me
Share of individuals (%)	11.6	6	9.3	6.9	16.5	10.7	7.9	7.6	8.9	6.5	8

Source: Own elaboration.

Table S2. Profiling of the clusters based on denominations

	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7
Present denomination	Eastern Orthodox to Protestant	Eastern Orthodox to Protestant	Roman Catholic to Protestant	Islam to Jewish to Other Christian denomination to Eastern Orthodox	Islam to Jewish to Other Christian denomination to Eastern Orthodox to Protestant	Islam to Jewish to Other Christian denomination to Eastern Orthodox to Protestant	Roman Catholic to Protestant
Climate change cause	Mainly human	Mainly human to about equally natural and human	Mainly natural to about equally natural and human	Mainly natural to about equally natural and human	About equally natural and human to mainly human	Entirely natural to about equally natural and human	Mainly human
Personal responsibility	6 to 8	0 to 2	10 to 7	0 to 5	10 to 8	0 to 2	9 to 7
Worry	Somewhat to very worried	Extremely to somewhat worried	Not very to somewhat worried	Not very to somewhat worried	Extremely to very worried	Extremely to somewhat worried	Extremely to somewhat worried
Energy frugality to reduce climate change	10 to 8	10 to 7	0 to 6	3 to 4	10 to 8	0 to 2	5
Likelihood energy frugality	0 to 4	10 to 4	7 to 6	8 to 4	10 to 7	0 to 1	0 to 2
Likelihood governments acting	10 to 5	0 to 5	8 to 6	8 to 5	8	0 to 2	0 to 3
Care for nature	Somewhat like me – like me	Very much like me – like me	Very much like me – like me	Somewhat like me – like me	Very much like me – like me	Somewhat like me	Very much like me – like me
Share of individuals (%)	15.8	7	21	14.3	16.9	10.9	14.2

Source: Own elaboration.

Table S3. Profiling of the clusters based on basic demographics

	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7	Cluster 8
Climate change cause	Mainly natural to about equally natural and human	About equally natural and human to mainly human	Entirely human to about equally natural and human	Mainly natural to mainly human	Mainly human to about equally natural and human	About equally natural and human to mainly human	Entirely human to about equally natural and human	About equally natural and human
Personal responsibility	0 to 6	10 to 6	8 to 6	9 to 6	10 to 9	3 to 6	10 to 6	5
Worry	Not at all to somewhat worried	Extremely to somewhat worried	Extremely to somewhat worried	Not at all to somewhat worried	Extremely to somewhat worried	Somewhat worried	Very to somewhat worried	Somewhat worried
Energy frugality to reduce climate change	0 to 6	10 to 6	9 to 6	0 to 6	10 to 8	4 to 5	10 to 6	9 to 5
Likelihood energy frugality	0 to 4	10 to 4	7 to 5	0 to 4	8 to 6	5 to 3	10 to 4	3 to 4
Likelihood governments acting	0 to 5	10 to 5	8 to 5	0 to 5	4 to 5	3 to 5	10 to 5	2 to 4
Care for nature	Like me	Like me	Very much like me – like me	Very much like me – like me	A little like me – somewhat like me	Somewhat like me – like me	Like me	Very much like me – like me
Gender	Male to female	Male to female	Female	Male to female	Male	Male	Male to female	Male to female
Age	71 to 66	17 to 25	90 to 79	39 to 40	76 to 68	46 to 44	60 to 54	16 to 18
Highest level of education	V1, lower tertiary education, BA level to IIIa, upper tier upper secondary	II, lower secondary to IIIa, upper tier upper secondary	IV, advanced vocational, sub-degree to IIIa, upper tier upper secondary	IIIb, lower tier upper secondary to IV, advanced vocational, sub-degree	Other	Other	IIIb, lower tier upper secondary to IIIa, upper tier upper secondary	Other
Paid work	Not marked	Not marked to marked	Not marked	Marked	Not marked	Marked	Not marked to marked	Not marked
Political views	0 to 5	10 to 5	9 to 5	7 to 5	5 to 6	2 to 5	9 to 5	5 to 3
Share of individuals (%)	20.4	18.7	12.6	24.6	0.1	0.1	23.6	0.1

Source: Own elaboration.